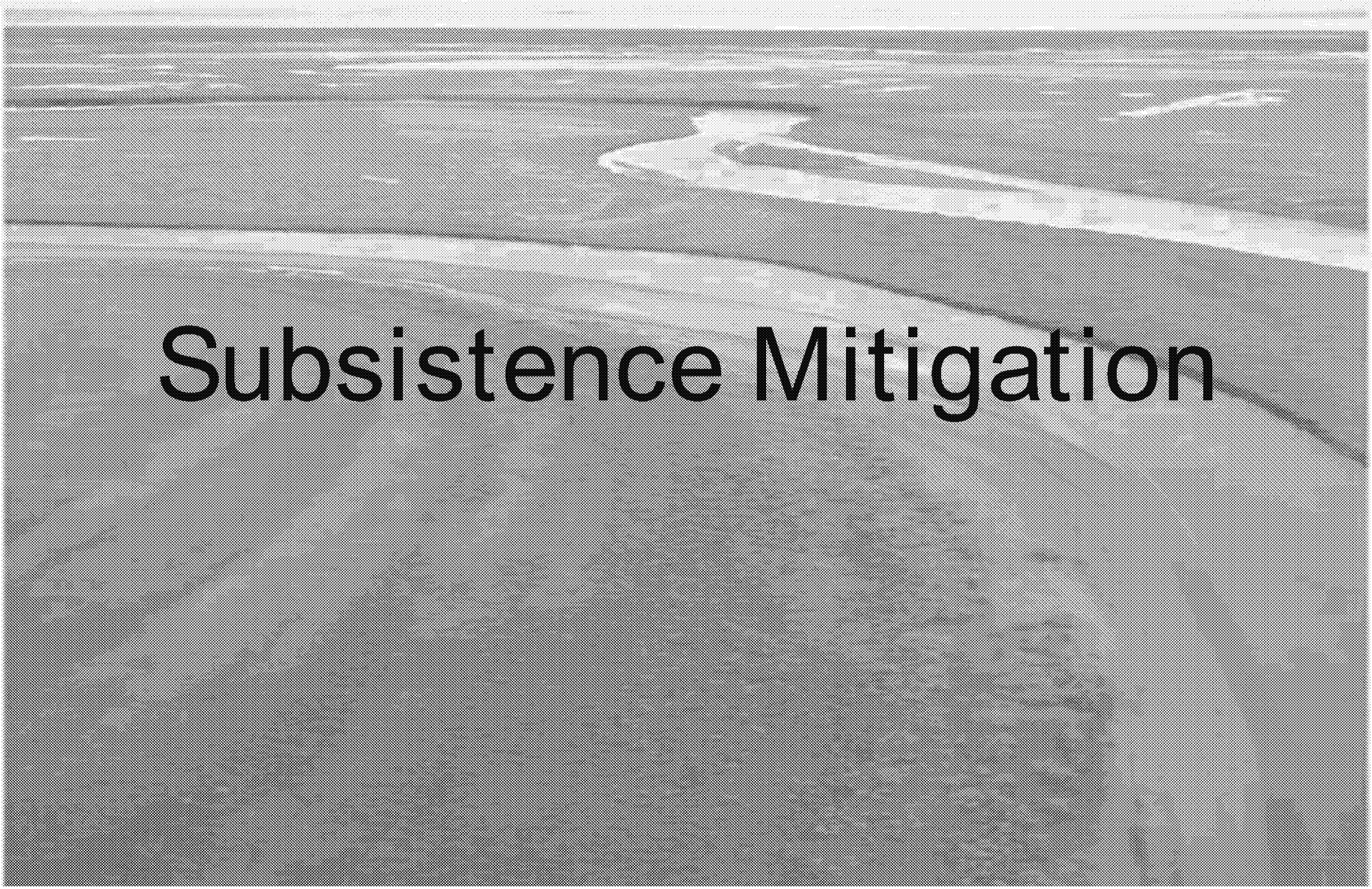

Subsistence Mitigation

Subsistence Mitigation Measures

ROP A-1 Waste and Litter

Protect public health, safety, and the environment by disposing of solid waste and garbage in accordance with applicable federal, State, and local law and regulations.

ROP A-2 Waste Management Plan

Minimize impacts on the environment from nonhazardous and hazardous waste generation. Protect the health and safety of oil field workers, local communities, subsistence users, recreationists, and the public. Avoid human-caused changes in predator populations. Minimize attraction of predators, particularly bears, to human use areas.

ROP A-3 Hazardous Substances Contingency Plans

Minimize potential pollution through effective hazardous materials contingency planning.

ROP A-4 Spill Prevention

Minimize the impact of contaminants on fish, wildlife, and the environment, including wetlands, marshes, and marine waters and protect subsistence resources, public health and safety.

ROP A-5 Refueling and Fuel Storage

Minimize potential impacts of contaminants from refueling operations on fish, wildlife, and the environment

ROP A-6 Minimize Wildlife Interaction

Minimize conflicts between humans and wildlife and avoid human-caused increases in predator populations.

BMP A-7

Minimize the impacts to the environment of disposal of produced fluids recovered during the development phase on fish, wildlife, and the environment.

ROP A-8 Firefighting Foam Standards

Prevent the release of poly- and perfluoroalkyl substances associated with the use of aqueous film-forming foam, a firefighting foam designed to extinguish flammable and combustible liquids and gases.

Subsistence Mitigation Measures cont.

BMP A-11
Ensure that permitted activities do not create human health risks through contamination of subsistence food.

BMP A-12
Minimize the negative health impacts associated with oil spills.

ROP B-2 Water Use from Lakes
Maintain natural hydrologic regimes in soils surrounding lakes and ponds and maintain populations of, and adequate habitat for, fish, aquatic invertebrates, and birds.

ROP C-2 Winter Tundra Travel
Protect stream banks, minimize the compaction of soils, and minimize the breakage, abrasion, compaction, or displacement of vegetation.

ROP C-3 Ice Bridges
Maintain natural spring runoff patterns and fish passage, avoid flooding, prevent streambed sedimentation and scour, protect water quality, and protect stream banks.

ROP E-1 Protections for Subsistence Users
Protect subsistence use and access to subsistence hunting and fishing areas and minimize potential impacts of development on subsistence resources.

ROP E-2 Infrastructure Siting Near Waterbodies
Protect fish-bearing water bodies, water quality, and aquatic habitats.

ROP E-3 Shoreline Infrastructure
Maintain free passage of marine and anadromous fish, protect shorebird staging and feeding areas, and protect subsistence use and access to subsistence hunting and fishing.

Subsistence Mitigation Measures cont.

ROP E-4 Minimize Development Footprint

Minimize the impacts of the development footprint.

ROP E-7 Sand and Gravel Mining

Minimize the environmental impacts of mining sand and gravel.

ROP E-6 Road and Pipeline Design

Minimize disruption of caribou movement and subsistence access.

ROP E-8 Facility Visibility Requirements

Prevention of migrating waterfowl, including species listed under the Endangered Species Act, from striking oil and gas and related facilities during low light conditions.

ROP E-10 Use of Ecological Mapping or Equivalent

Use ecological mapping (or equivalent approach) as a tool to assess fish and wildlife habitat before development of permanent infrastructure to conserve important habitat types, including BLM sensitive plant species and habitat for BLM sensitive animal species.

ROP F-1 Aircraft Use Plan

Provide aviation data required for BLM management, for ESA consultation with the USFWS and NMFS, and to minimize impacts on subsistence activities and wildlife.

ROP F-2 Minimum Flight Altitudes

Minimize the effects of low-flying aircraft on wildlife, subsistence activities, and local communities.

Subsistence Mitigation Measures cont.

ROP F-3 Reduce Impacts of Air Traffic on Subsistence Resources

To reduce the impacts of aircraft traffic on North Slope subsistence hunters

LS G-1 Ensure the long-term reclamation of land to its previous condition and use.

ROP H-1 Subsistence Plan

Prevent unreasonable conflicts with subsistence.

ROP H-3 Hunting, Fishing, and Trapping by Permittees

Minimize potential impacts on hunting, trapping, and fishing species and on subsistence harvest of those animals consistent with requirements of the Alaska National Interest Lands Conservation Act.

ROP H-4 Notification and Consultation with Alaska Native Groups

Prevent unreasonable conflicts with subsistence access and activities by providing opportunities for consultation and incorporating input into project plans.

ROP I-1 Employee Orientation Program

Minimize cultural and resource conflicts.

LS K-1 River Setbacks

Minimize the disruption of natural flow patterns and changes to water quality and the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of floodplain and riparian areas; the loss of spawning, rearing, or overwintering habitat for fish; the loss of cultural and paleontological resources; the loss of raptor habitat; impacts on subsistence cabins and campsites; the disruption of subsistence activities; and impacts on scenic and other resource values.

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Subsistence Mitigation Measures cont.

LS K-2 Deep Water Lakes

Minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of deep water lakes; the loss of spawning, rearing or overwintering habitat for fish; the loss of cultural and paleontological resources; impacts on subsistence cabins and campsites; and the disruption of subsistence activities.

LS K-5 Coastal Area Setback

Protect coastal waters and their value as fish and wildlife habitat; minimize hindrance or alteration of caribou movement within caribou coastal insect-relief areas; protect the summer and winter shoreline habitat for polar bears and the summer shoreline habitat for walrus and seals; prevent loss of important bird habitat and alteration or disturbance of shoreline marshes; and prevent impacts to subsistence resources and activities.

LS K-6 Goose Molting Area

Minimize disturbance to molting geese and loss of goose molting habitat in and around lakes in the Goose Molting Area.

LS K-8 Teshekpuk Caribou Herd Habitat Area

Minimize disturbance and hindrance of caribou, or alteration of caribou movements through portions of the TCH Habitat Area that are essential for all-season use, including calving and rearing, insect relief, and migration/movements.

LS K-9 Teshekpuk Lake Caribou Movement Corridor

Minimize disturbance and hindrance of caribou or alteration of their movements that are essential for all-season use, including calving and rearing, insect relief, and migration, in the area extending from the eastern shore of Teshekpuk Lake to approximately 6 miles eastward to the Kogru Inlet and the area next to the northwest corner of Teshekpuk Lake.

BMP K-10 Southern Caribou Calving Area

None of the area is available for oil and gas leasing or exploratory drilling. Minimize disturbance and hindrance of caribou, or alteration of caribou movements (that are essential for all-season use, including calving and post-calving, and insect relief) in the area south/southeast of Teshekpuk Lake.

Subsistence Mitigation Measures cont.

LS K-12 Federal Mineral Estate under Allotments

Minimize disturbance to Native subsistence hunters resulting from development and ensure access to Native allotments

LS K-13 Lease Deferral

Minimize the impact of rapid development on the communities within the NPR-A.

ROP L-1 Tundra Travel

Protect stream banks and water quality; minimize compaction and displacement of soils; minimize the breakage, abrasion, compaction, or displacement of vegetation; protect cultural and paleontological resources; maintain populations of, and adequate habitat for, birds, fish, and caribou and other terrestrial mammals; and minimize impacts to subsistence activities.

ROP M-1 Vehicle Use Plans

Minimize disturbance and hindrance of wildlife, or alteration of wildlife movement.

ROP M-2 Invasive Species Prevention Plan

Prevent the introduction or spread of nonnative, invasive species in the NPR-A.

Additional Suggested Subsistence Mitigation Measures

1. Inform employees who are North Slope residents of company subsistence leave policies and ensure that leave policies are flexible to account for annual variation in the timing and length of subsistence activities.

2. Employ subsistence representatives who receive daily communications on Project activities and report potential conflicts with subsistence users. Subsistence representatives should be provided with clear communication protocols and training, be local and knowledgeable residents, and be included in field activities the community believes have a high potential of conflicting with subsistence uses (e.g., helicopter-based surveys).

3. In coordination with local organizations, such as the Kuukpik Subsistence Oversight Panel (KSOP) (required in CPAI design measure 68 and BLM [2020a] ROP H-4), ensure communications include the timing and location of development activities such as air traffic, blasting, and other construction activities.

4. Identify areas with high drifted snow accumulation along pipelines after construction and implement a snow management program to clear drifts and create access points (i.e., openings) in areas where drifts accumulate for a long distance (e.g., quarter- and half-mile lengths) along pipelines. Consult with Nuiqsut residents on an appropriate distance for cleared access areas as well as the depth of snowdrifts that impede travel under pipelines.

Additional Suggested Subsistence Mitigation Measures cont.

5. As part of the Subsistence Plan (required in BLM [2020a] ROP H-1) and as part of the Proponent's notification and consultation with Alaska Native groups (required in BLM [2020a] BMP H-4), provide equal opportunities for various local entities (e.g., KSOP, NVN, City of Nuiqsut, Kuukpik), in addition to knowledgeable subsistence users, to provide input.

6. Continue to consult with local subsistence users and community organizations regarding the appropriate design and location of subsistence boat ramps, pullouts, and subsistence tundra access ramps. Consult with other operators regarding other boat ramp projects on the North Slope that may inform future designs. (required as part of BLM [2020a] ROP E-1.)

7. Participate in Conflict Avoidance Agreements with the Alaska Eskimo Whaling Commission to reduce potential impacts on bowhead whale hunting resulting from barge and vessel traffic.

8. Work with community organizations to establish measures to reduce impacts of vehicle traffic on subsistence activities, particularly during the Project's construction phase.

9. Install traffic control signs (e.g., stop signs) to halt industry vehicle traffic at all subsistence access ramps to ensure that subsistence users can cross safely.

10. Place development-free buffer around Native Allotment be at least 1 mile to ensure the viability of the allotment for subsistence use. Exceptions would be made for allotment owners who agree to having development closer than 1 mile.

NSB Mitigation Measures

Subsistence Use Protection

A. Access: CPAI shall consult with the NSB, the Native Village of Nuiqsut, Kuukpik Corporation, and the Kuukpik Subsistence Oversight Panel (KSOP) at least annually. Examples of uses and developments requiring consultation include but are not limited to the following: (1) construction of facilities and roads; (2) aircraft movement; (3) drilling; and (4) the selection of water sources. Through this consultation, CPAI shall make reasonable efforts to assure that planned activities are compatible with subsistence activities and will not result in unreasonable interference with subsistence harvests or subsistence resources. CPAI shall submit a report of this consultation, including areas of agreement and identification of any unresolved conflicts, to the Administrator prior to the commencement of the uses/developments at issue. The Administrator may take measures consistent with NSBMC Title 19 to address any unresolved conflicts relating to said uses/developments.

B. Due Diligence: CPAI shall exercise due diligence to mitigate all adverse impacts on subsistence use activities caused by CPAI's activities.

C. Timing: To the maximum extent practical, initial project construction activities, such as construction of gravel roads, pad, pipeline and bridges, will be done during the winter season.

NSB Mitigation Measures

Subsistence

a. CPAI will fund a contractor to design and conduct a subsistence study that investigates the effects of the company's Willow development activities and associated infrastructure, as well as future exploration and development activities and associated infrastructure, to subsistence hunters from Nuiqsut. The study should focus on all ConocoPhillips facilities and activities within the area that is subject to this re-zone, as well as facilities and activities outside of this area that have the potential to impact subsistence resources and activities within the area, as determined by discussions with DWM and Planning staff. The project should at a minimum:

i. Examine possible effects from CPAI developments and activities to subsistence activities, especially on caribou and migratory bird hunting. activities, especially on caribou and migratory bird hunting.

ii. Document hunter concerns and opinions about impacts from the ConocoPhillips facilities and activities associated with this rezone.

Minimizing Traffic Impacts

CPAI shall coordinate with KSOP, Kuukpik, and the NSB Planning and Wildlife Departments to establish standard air traffic routes that will minimize interference with animal concentrations. (Concentrations of caribou herds are of particular concern.) CPAI shall follow these routes unless there is a threat to human safety, or an animal concentration or subsistence user is positioned along the routes

Caribou Mitigation

Caribou Mitigation Measures

ROP A-3 Hazardous Substances Contingency Plans
Minimize potential pollution through effective hazardous materials contingency planning.

ROP A-4 Spill Prevention
Minimize the impact of contaminants on fish, wildlife, and the environment, including wetlands, marshes, and marine waters and protect subsistence resources, public health and safety.

ROP A-5 Refueling and Fuel Storage
Minimize potential impacts of contaminants from refueling operations on fish, wildlife, and the environment

BMP A-7
Minimize the impacts to the environment of disposal of produced fluids recovered during the development phase on fish, wildlife, and the environment.

ROP A-8 Firefighting Foam Standards
Prevent the release of poly- and perfluoroalkyl substances associated with the use of aqueous film-forming foam, a firefighting foam designed to extinguish flammable and combustible liquids and gases.

ROP C-2 Winter Tundra Travel
Protect stream banks, minimize the compaction of soils, and minimize the breakage, abrasion, compaction, or displacement of vegetation.

ROP C-3 Ice Bridges
Maintain natural spring runoff patterns and fish passage, avoid flooding, prevent streambed sedimentation and scour, protect water quality, and protect stream banks.

ROP E-1 Protections for Subsistence Users
Protect subsistence use and access to subsistence hunting and fishing areas and minimize potential impacts of development on subsistence resources.

Caribou Mitigation Measures cont.

ROP E-2 Infrastructure Siting Near Waterbodies

Protect fish-bearing water bodies, water quality, and aquatic habitats.

ROP E-4 Minimize Development Footprint

Minimize the impacts of the development footprint.

ROP E-6 Road and Pipeline Design

Minimize disruption of caribou movement and subsistence access.

ROP E-10 Use of Ecological Mapping or Equivalent

Use ecological mapping (or equivalent approach) as a tool to assess fish and wildlife habitat before development of permanent infrastructure to conserve important habitat types, including BLM sensitive plant species and habitat for BLM sensitive animal species.

ROP E-14 GIS Files for Proposed Infrastructure

Provide information to be used in monitoring and assessing wildlife movements during and after construction.

ROP F-1 Aircraft Use Plan

Provide aviation data required for BLM management, for ESA consultation with the USFWS and NMFS, and to minimize impacts on subsistence activities and wildlife.

ROP F-2 Minimum Flight Altitudes

Minimize the effects of low-flying aircraft on wildlife, subsistence activities, and local communities.

Caribou Mitigation Measures cont.

ROP F-3 Reduce Impacts of Air Traffic on Subsistence Resources

To reduce the impacts of aircraft traffic on North Slope subsistence hunters

LS G-1 Ensure the long-term reclamation of land to its previous condition and use.

ROP H-3 Hunting, Fishing, and Trapping by Permittees

Minimize potential impacts on hunting, trapping, and fishing species and on subsistence harvest of those animals consistent with requirements of the Alaska National Interest Lands Conservation Act.

ROP H-4 Notification and Consultation with Alaska Native Groups

Prevent unreasonable conflicts with subsistence access and activities by providing opportunities for consultation and incorporating input into project plans.

ROP I-1 Employee Orientation Program

Minimize cultural and resource conflicts.

LS K-5 Coastal Area Setback

Protect coastal waters and their value as fish and wildlife habitat; minimize hindrance or alteration of caribou movement within caribou coastal insect-relief areas; protect the summer and winter shoreline habitat for polar bears and the summer shoreline habitat for walrus and seals; prevent loss of important bird habitat and alteration or disturbance of shoreline marshes; and prevent impacts to subsistence resources and activities.

LS K-8 Teshekpuk Caribou Herd Habitat Area

Minimize disturbance and hindrance of caribou, or alteration of caribou movements through portions of the TCH Habitat Area that are essential for all-season use, including calving and rearing, insect relief, and migration/movements.

Caribou Mitigation Measures cont.

LS K-9 Teshekpuk Lake Caribou Movement Corridor

Minimize disturbance and hindrance of caribou or alteration of their movements that are essential for all-season use, including calving and rearing, insect relief, and migration, in the area extending from the eastern shore of Teshekpuk Lake to approximately 6 miles eastward to the Kogru Inlet and the area next to the northwest corner of Teshekpuk Lake.

BMP K-10 Southern Caribou Calving Area

None of the area is available for oil and gas leasing or exploratory drilling. Minimize disturbance and hindrance of caribou, or alteration of caribou movements (that are essential for all-season use, including calving and post-calving, and insect relief) in the area south/southeast of Teshekpuk Lake.

ROP L-1 Tundra Travel

Protect stream banks and water quality; minimize compaction and displacement of soils; minimize the breakage, abrasion, compaction, or displacement of vegetation; protect cultural and paleontological resources; maintain populations of, and adequate habitat for, birds, fish, and caribou and other terrestrial mammals; and minimize impacts to subsistence activities.

ROP M-1 Vehicle Use Plans

Minimize disturbance and hindrance of wildlife, or alteration of wildlife movement.

ROP M-2 Invasive Species Prevention Plan

Prevent the introduction or spread of nonnative, invasive species in the NPR-A.

Additional Suggested Caribou Mitigation Measures

1. BMP E-7 describes requirements related to caribou ramps over pipelines or buried pipelines. The Project could designate specific locations for these, such as northeast of the airstrip in Alternative B, or areas where caribou movements could be funneled and where roads and pipelines would be close together. The decision to add a crossing ramp over a buried pipeline should consider potential effects of reduced access to the pipeline for oil spill detection and response and thermokarst or changes in surface flow due to the resulting long, linear ditch that would fill with water.

2. Install game cameras to study the effectiveness of measures used to reduce vehicle traffic impacts.

3. Include measures in the vehicle use plan to minimize traffic impacts
   - Require vehicles to stop traffic when 25 or more caribou appear to be approaching the road.
   - Require vehicles to caravan or require periodic traffic closures when groups of caribou are near a road and the road has traffic rates of more than 15 vehicles per hour.

4. Restrict Q400 air traffic between Alpine and Willow at certain times of year

5. Require the use of propylene glycol for deicing and for vehicle cooling systems, which is not toxic to wildlife

NSB Mitigation Measures

Wildlife and Habitat Protection

A. General Provisions for studies on caribou, waterbirds, fish and subsistence:

The following provisions apply to the caribou, waterbird, subsistence, and fish stipulations.

a) Study designs will be discussed and coordinated with the NSB Department of Wildlife Management (DWM) for submittal to the NSB by 1 March 2021 and each year thereafter as necessary. The DWM and Planning will review, seek revisions as appropriate, and approve the study designs by 1 April 2021 and each year thereafter as necessary.

b) An annual report will be prepared and distributed to NSB DWM and Planning departments by 15 February and a meeting scheduled with NSB DWM and Planning, to occur by 1 April. This meeting will discuss the results and the potential need for adjustments to scope to assess possible impacts to caribou, waterbirds, fish, and subsistence users. The Land Management Administrator and Director of the DWM will make the final decision of whether study designs need to be altered and/or additional data collection or analyses are required.

c) CPAI will consult with KSOP on study design prior to submittal to the NSB and provide KSOP with annual reports.

d) CPAI will make data available from their studies annually to the NSB DWM and within a year of completion of the study to the general public through a data archive (e.g., UAF's Geographic Information Network of Alaska [GINA], Alaska Ocean Observing System [AOOS], etc.).

e) CPAI will provide the DWM with reports :from studies (wildlife, habitat, erosion etc.) required by other agencies involved in permitting lands associated with the Willow Project, and to the maximum extent practical where multiple study requirements can be aligned, avoid duplication of study efforts among the NSB and such other agencies.

NSB Mitigation Measures cont.

f). To the extent practicable, CPAI and its contractors will minimize flights by hiring local boat drivers, snow machine drivers, and allowing their contractors to camp at a study site.

g).To the extent practicable, CPAI will involve students from Nuiqsut (or other North Slope if no students are available from Nuiqsut) in their studies.

Caribou

CPAI will fund a caribou study to analyze the distribution and movements of caribou around the Willow Project area and adjacent areas to assess habitat relationships and possible impacts from development.

a) CPAI will fund a third-party contractor to :

i. Characterize pre-construction caribou movements utilizing historic telemetry data

ii. Assist ADF&G or the NSB DWM in the collection of GPS telemetry data (e.g., potential purchase of additional caribou collars or database management etc.)

iii. Determine caribou pre- and post-construction movement rates in relation to roads pipelines and pads associated with their project.

iv. Characterize habitat conditions (e.g., snow melt, vegetation habitat, plant biomass, infrastructure etc.) within the study area using best available technology.

v. Evaluate these indices of habitat conditions, with particular attention to possible impacts from development, on the distribution of caribou utilizing the study area.

NSB Mitigation Measures cont.

Minimizing Traffic Impacts

CPAI shall coordinate with KSOP, Kuukpik, and the NSB Planning and Wildlife Departments to establish standard air traffic routes that will minimize interference with animal concentrations. (Concentrations of caribou herds are of particular concern.) CPAI shall follow these routes unless there is a threat to human safety or an animal concentration or subsistence user is positioned along the rout